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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,452	06/23/2003	Naomi Awano	8007-1051	7222

466 7590 01/12/2006

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EXAMINER
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MARTIN, ANGELA J

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/600,452

Applicant(s)

AWANO ET AL.

Examiner

Angela J. Martin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

This Office Action is responsive to the Amendment filed on October 14, 2005. The Applicant has added new claims 15-20. However, a new rejection is presented for the following reasons of record.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al., JP 11-162508 (machine translation).

Rejection of claims 1-14 drawn to a nonaqueous electrolytic solution.

Yamamoto et al., teach a nonaqueous electrolytic solution comprising an electrolyte salt (abstract) dissolved in organic solvent (sect. 0101), which contains a silicon compound represented by formula 1 (sect. 0016-0017), where R1 is an alkenyl R2 and R3 are halogens (sect. 0017). It teaches R1 is a vinyl, R2, R3 is a methyl (sect. 0017). It teaches X is a fluorine (sect. 0016). It teaches the organic solvent contains a cyclic ester, sulfone or sulfoxide (sect. 0043). It teaches organic solvent contains a cyclic carbonate and an acyclic carbonate (sect. 0101). It teaches the cyclic carbonate comprises ethylene carbonate, propylene carbonate (sect. 0036). It teaches the acyclic carbonate comprises dimethyl carbonate (sect. 0036). It teaches a carboxylic ester compound represented by formula 30 (sect. 0089). It teaches the electrolyte salt is

LiClO<sub>4</sub> (sect. 0095). It teaches the silicon compound is present in an amount of 0.05 to 3% by volume (Table 1). It teaches a nonaqueous secondary battery comprising the electrolyte solution (abstract).

Thus, the claims are anticipated.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al., JP 11-162508 (machine translation), in view of Yamada et al., U.S. Pat. No. 6,872,493 B2.

Rejection of claims 15-20 drawn to a nonaqueous electrolytic solution.

Yamamoto et al., teach a nonaqueous electrolytic solution as described above.

Yamada et al., teach a nonaqueous electrolytic solution comprising at least 5% by wt flame retardant (col. 12, lines 6-8; col. 13, lines 57-61). It teaches the flame retardant is one of a halogen and phosphorus (col. 12, lines 6-8). It teaches the retardant is a phosphoric ester (col. 12, lines 9-39). It teaches 10-50% by wt of flame retardant (col. 13, lines 57-61).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to insert the teachings of Yamada et al., into the teachings of Yamamoto et al., because Yamamoto et al., teaches a flame retardant (fluororesin) in

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the separator to improve the safety of the battery (sect. 0055). Yamada et al., teach a flame retardant which can be a "halogen type, a phosphorus type or other flame retardant...to make the solution flame retardant" (col. 12, lines 6-8).

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Popall et al., *Electrochimica Acta*, teach electrolytes for lithium batteries comprising silicon in the electrolyte.

### ***Response to Arguments***

6. Applicant's arguments with respect to above claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela J. Martin whose telephone number is 571-272-1288. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
AJM